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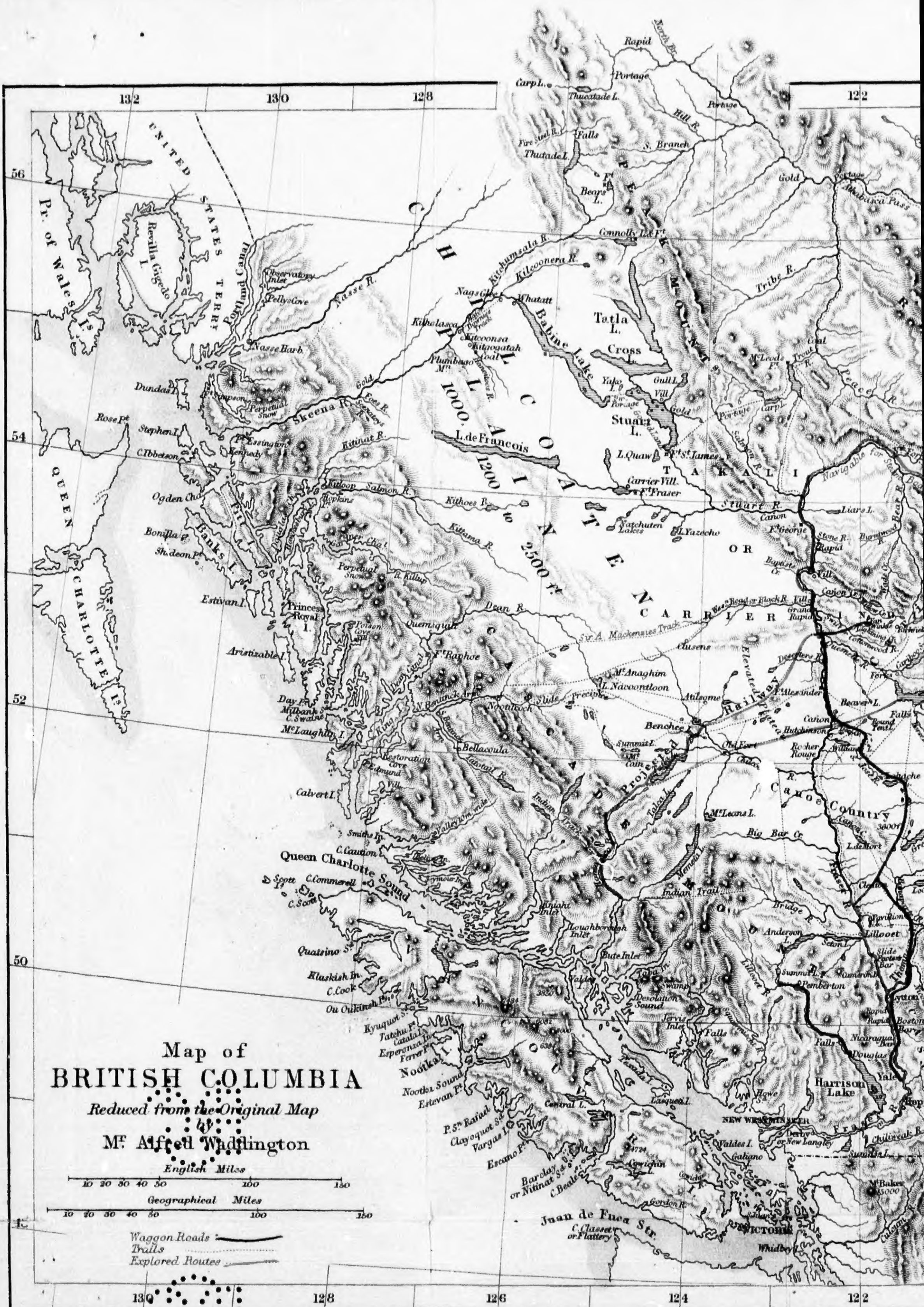
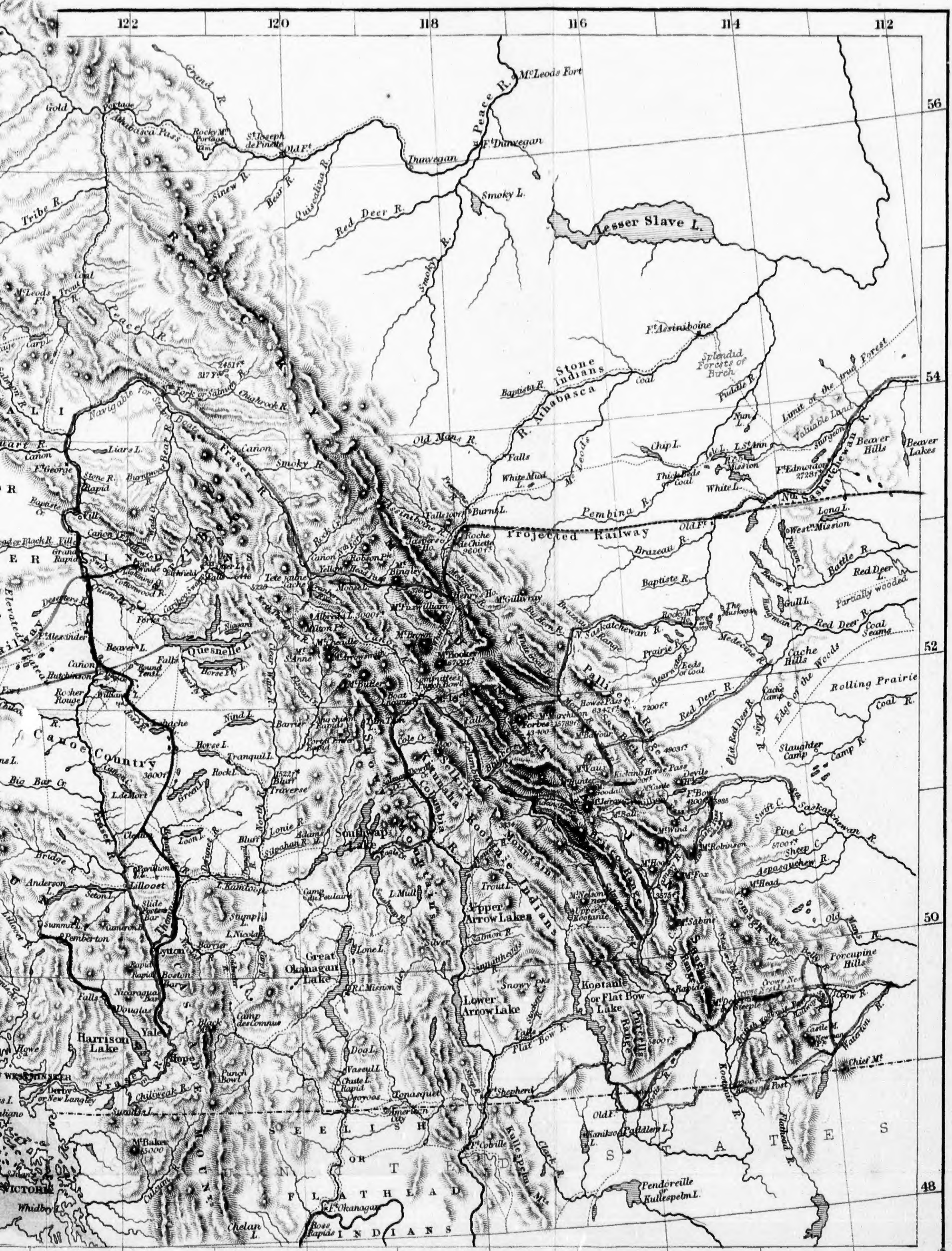


Map of
BRITISH COLUMBIA
Reduced from the Original Map
by
Mr. Alfred Waddington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Mc Leods Fort
Peace R.
Ft Dunvegan
Dunvegan
Old Ft
St Joseph de Pinette
Rocky Mtn Portage
Grand R.
Gold
Portage
Athabasca Pass
Sinew R.
Bear R.
Quiscolina R.
Smoky L.
Smoky R.
Red Deer R.
Lesser Slave L.
Tribe R.
Trout
Coal
Mc Leods Ft
Peace R.
Carp L.
Fork or Salmon
Chistrook R.
Navigable for Steam Boats
Fraser R.
Canon
Smoky R.
Liars L.
Ft George
Stone R.
Rapid
Burnwood Bear R.
Baptiste Cr.
Ville
Canon
Grand Rapid
Ft Assiniboine
Splendid Forests of Birch
Stone Indians
Baptiste R.
R. Arabasca
Coal
Paddle R.
Limit of the true Forest
Valuable Land
Nun L.
Old Mans R.
Falls
White Mud L.
Mc Leods
Chip L.
Thick Beds of Coal
L. St Ann
Mission
White L.
Ft Edmonton
Surgeon R.
Beaver Hills
Beaver Lakes
Pembina R.
Burn L.
Fallstown
Roche de Chiette
Projected Railway
Old Ft
Nth Saskatchewan
Lona L.
West. Mission
Brazeau R.
Pigeon C.
Battle R.
Red Deer L.
Baptiste R.
Beaver R.
Gull L.
Partially wooded
Rocky Mtn House
The Muskeg
Blind man R.
Red Deer R.
Coal Seams
N. Saskatchewan R.
Prairie R.
Medecine R.
Beds of Coal
Cache Hills
Edge of the Woods
Rolling Prairie
Red Deer R.
Cache Camp
Coal R.
Lit. Red Deer R.
Slaughter Camp
Camp R.
Palliser Range
Howse Pass
Bow R.
Kicking Horse Pass
Ft Bow
Swift C.
Sth Saskatchewan R.
Pine C.
Sheep C.
Aspasquehew R.
Mt Head
Old Man R.
Porcupine Hills
Crows Nest Pass
Belly R.
Waterton R.
Chief Mt
Castle Mt
Flathead R.
Kootanie R.
Tobacco Plains
Mt Robinson
Mt Fox
Mt Sabine
Mt Nelson
Mt Hooker
Mt Brown
Mt Murchison
Mt Forbes
Mt Balfour
Mt Ball
Mt Hunter
Mt Goodall
Mt Vaux
Mt Wind
Mt Hood
Mt Gillivray
Henry's Ho.
Jasper's Ho.
Yellow Head Pass
Robson Pk
Mt Bingley
Tete Jaune Cache
Mt Fitzwilliam
Albreda L.
Milton Pk
Mt Cheadle
Mt Arrowsmith
Mt St Anne
Mt Butler
Boat Encampment
Committee's Punch Bowl
Canoe R.
Rock Cr.
Canon
Quesnelle L.
Horse Fly L.
Beaver L.
Canon
Hutchinson
Rocher Rouge
Forks
Ft Alexander
Elevated Plateau
Railway
Canoe Country
Big Bar Cr.
Bridge R.
Canon
L. de Mort
Clinton
Green L.
Horse L.
Tranquil L.
Rock L.
Blue Traverse
North R.
Loon L.
Lonie R.
Adams L.
Shuswap Lake
Seymour R.
Columbia R.
Kootanie R.
Rocky Mountains
Kootanie Indians
Selkirk Range
Upper Arrow Lakes
Trout L.
Salmon R.
Lower Arrow Lake
Kootanie or Flat Bow Lake
Purcell Range
Flat Bow R.
Falls
Snowy Pks
Pavillion
Lillooet
L. Kamloops
Camp du Poulain
L. Mull
Anderson L.
Seton L.
Slide
Bar
Summit L.
Pemberton
Stump L.
L. Nicola
Lytton
Boston Bar
Nicaragua Bar
Falls
Douglas
Yale
Hope
Harrison Lake
Great Okanagan Lake
Lone L.
R. C. Mission
Camp des Comnus
Dog L.
Vaseul L.
Chute L.
Rapid
Ft Shepherd
Tonasquet
American City
Ft Colville
Kullespelm Mts
Clark R.
Old Ft
Kanikso L.
Puddles L.
Pend Oreille or Kullespelm L.
Westminster
Derby or New Langley
Fraser R.
Chiloweak R.
Sumas L.
Punch Bowl
Mt Baker 15000
Victoria
Whidbey I.
Chelan L.
Ft Okanagan
Ross Rapids
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F L A T H E A D
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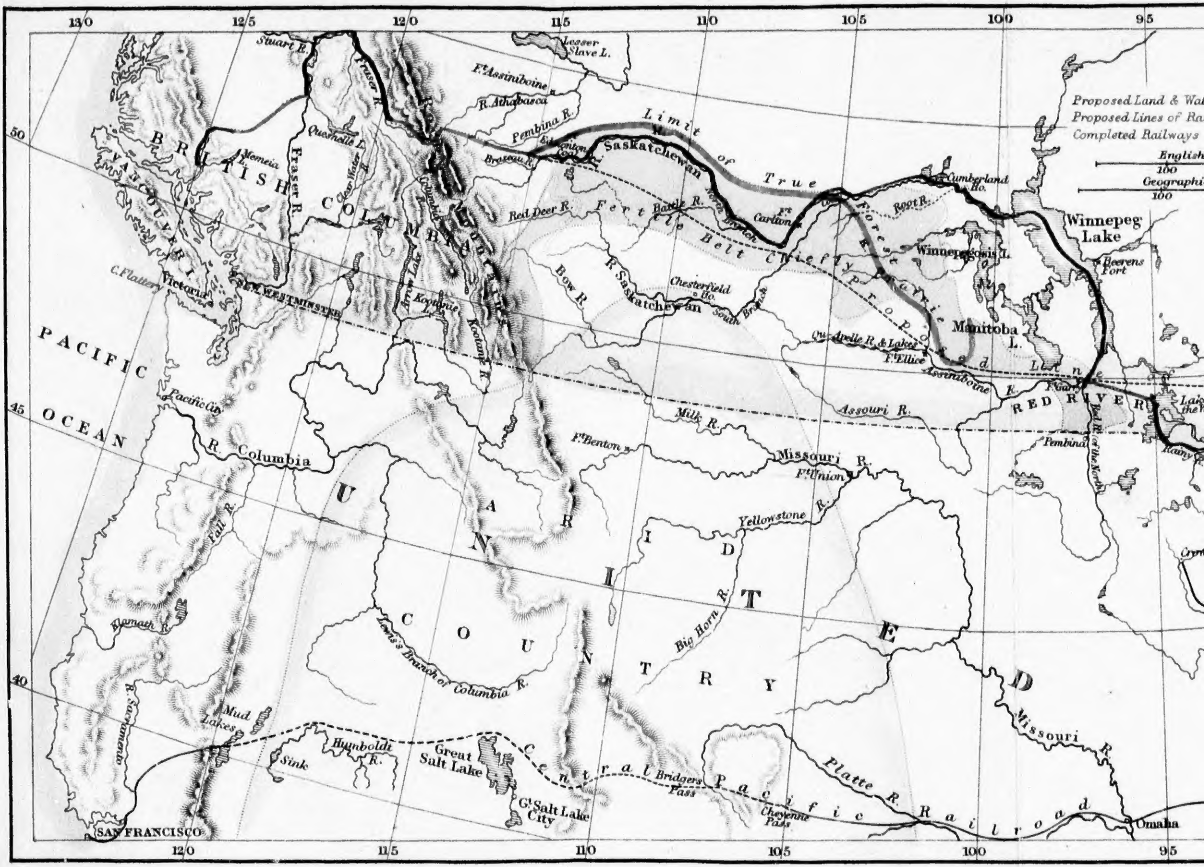
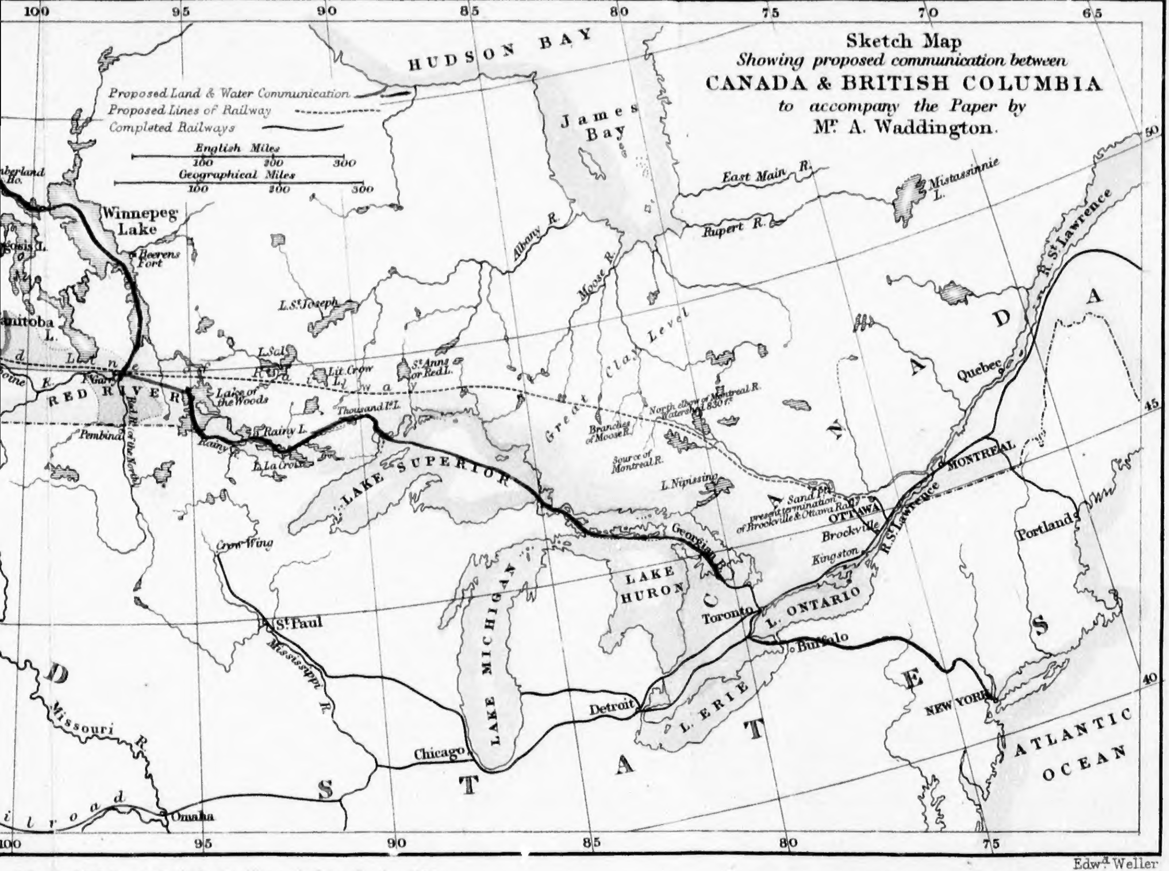
U N I T E D
S T A T E S
Silver
Columbia R.



Published for the Journal of the Royal Geographical Society by J. Murray,



Sketch Map
Showing proposed communication between
CANADA & BRITISH COLUMBIA
to accompany the Paper by
Mr. A. Waddington.

yal Geographical Society by J. Murray, Albemarle Street, London, 1868.

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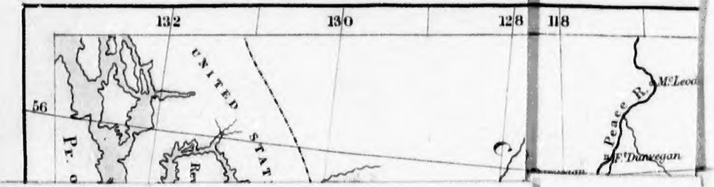

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Peace R.
McLeod
Ft Dunvegan

THE

Excerpt from the Journal and Proceedings of
THE ROYAL GEOGRAPHICAL SOCIETY, 1, Savile Row;
FRANCIS EDWARDS, 83, High Street, Marylebone, W.

VI.—*On the Geography and Mountain Passes of British Columbia in Connection with an Overland Route.* By A. WADDINGTON, Esq.

Read, March 9, 1868.

THE possibility of opening a direct and available communication between the Canadas and the Pacific, through British North America and the Rocky Mountains, has been for many years a subject of discussion, and even of doubt. True, the portion west of Lake Superior was thoroughly explored for this purpose as far as the Red River Settlement and the lower end of the Great Saskatchewan in 1857-8, at the expense and by order of the Canadian Government, and the explorations of Palliser, Hector, Blakiston, Sullivan, and others, have made us acquainted with the main features of the Saskatchewan territory, and, to a certain extent, with some of the passes through the Rocky Mountains. But the difficulties of connecting an overland railway with the Pacific through British Columbia were not generally known, nor have the geographical features of the country west of the Rocky Mountains ever been laid before the public.

The chief object of the present paper is, therefore, to collect and embody what I have learnt respecting them, so as to supply this deficiency, and furnish such details as were still wanting. The writer has spent over five years in studying them, and has laid out considerable sums in equipping and sending out exploring parties in all directions under reliable engineers, or conducted by himself; and the result has been the discovery, after much uncertainty and expense, of a feasible route for a railroad through the Cascade Range, followed by the survey, and partial opening of 222 miles of road, through an entirely unknown country, from the coast to the mouth of Quesnelle River, and which must necessarily form the first link in any future overland route. From this point (whence a road leads to the Cariboo Gold-mines in the neighbourhood) the Upper Fraser is navigable for steam-boats for 280 miles farther up to the "Leather," or "Yellow Head Pass," through the Rocky Mountains, and shortly after their watershed forms the limit of the colony.

The colony of British Columbia is to a great extent occupied by two ranges of mountains, running N.N.W., but gradually diverging from each other towards the north, where they enclose a vast plain, of which more will be said hereafter. That on the east side bears the name of the Rocky Mountains, and the other that of the Cascade or Coast Range. They have one feature in common, which is that their eastern edge rises in both cases abruptly from an elevated plain; and in the Rocky Mountains the highest crest or ridge is also on that side; whereas the descent on the western slope, though greater, is extended over a wider distance, and therefore in general more moderate.

The MAIN crest of the Rocky Mountains, several of the peaks of which rise to a height of 16,000 feet, forms the eastern limit of the colony, and runs from its south-east corner at the boundary line in a N.N.W. direction to beyond the northern limit of the colony, in Lat. 60°. I say the main crest, because what generally bears the name of the Rocky Mountains is composed in British Columbia of three distinct ranges, divided from each other by rivers and deep depressions, and having each its own crest or ridge. Of these the two western ones, though less elevated, are chiefly composed of metamorphic rocks, and therefore, generally speaking, more distorted and abrupt than the rounded and granitic peaks and domes of the main crest. The whole forms a triple fence as it were to the colony, or one vast sea of mountains, averaging from 150 to 160 miles wide.

The Middle range, which, as before said, is somewhat lower than the main one, and which takes the names of the Purcell, Selkirk, and Malton ranges successively, is separated from the main ridge by the Kootanie River, the Upper Columbia, the Canoe River, and the Upper Fraser; and presents one uninterrupted line of mountains, some of them 12,000 feet high, for 240 miles, from the Boundary-line to the great bend of the Columbia, in 52° N. Lat. The Columbia River here runs towards the north, and, after separating the above middle or Selkirk Range from the Rocky Mountains proper, cuts through it at the Big Bend, and, turning south, again separates it in its downward course from the third or more westerly range. But the travellers who have discovered the different passes (such as they are in this latitude) through the Rocky Mountains, were unable to push their explorations further than this eastern or upper portion of the Columbia, excepting near the boundary-line; so that neither the middle range nor the western one, which were perhaps supposed, as being less elevated, to present less difficulties, had been hitherto examined. In consequence, however, of the gold discoveries at Kootanie and the Big Bend, or in connection with them, they were carefully explored last year; but no practicable pass could be discovered through the Selkirk Range, which thus presents an impenetrable barrier for a railroad in that direction.

The Third, or more westerly range, is the least elevated of the three, though still ranging from 4000 to 8000 feet high. South of Fort Shepherd and the Boundary Line, where it forms eleven sharp ridges running north and south, it bears the name of the Kulspelm Mountains, and further north of the Snowy Mountains or Gold Range. The Bald Mountains in Cariboo, 6000 to 8000 feet high, are also a continuation of this range, which, after crossing the Fraser below Fort George, lowers towards the north, and takes the name of the Peak Mountains. The only good pass from the Columbia through this third range is to the south end of Soushwap Lake, and was discovered last year by Mr. Moberly, the Government Engineer at Eagle Creek, in Lat. 50° 56′. An important feature in both the middle and western ranges just described is their gradual depression north of

Cariboo, to where the Upper Fraser, after separating the middle range from the Rocky Mountains to the east, abandons its north-westerly course, and makes a circular sweep through the depression from east to west, and then south to below Fort George. This depression forms a large tract of level flat country, on each, but more particularly on the south, side of the Fraser; and as the country and climate are both well adapted for settlements offers every inducement and facility (if, indeed, it be not the only pass) for a future railroad through these two ranges of the Rocky Mountains.

The Cascade Range forms the Coast-line of the colony, which it follows from near the mouth of the Fraser into the Russian (now American) territory. Its average width is about 110 miles, and it may also be considered as a sea of mountains, some of which attain, if they do not exceed, a height of 10,000 feet. Its crest, starting from Mount Baker, a few miles south of the Boundary Line, passes a little north of the head of Jervis Inlet, some 25 miles north of the head of Bute Inlet, 22 miles east of the head of North Bentinck Arm, and crosses Gardener's Channel about 20 miles west of its head. From Mount Baker the Cascade Range throws out a spur east and north in the direction of the Great Okanāgan Lake and Fort Kamloops, so as nearly to join the Gold Range; and it entirely envelopes the Fraser from a little above Harrison River (55 miles above New Westminster), up to its junction with the Thompson at Lytton, and even a few miles beyond, on both rivers. But the most rugged portion in this direction lies between Yale and Lytton, where mountain succeeds mountain, and where those along the river present the most formidable aspect; bluff after bluff of solid perpendicular granite, intermingled with steep slides of rolling rock, washed by a deep impetuous stream and 1500 to 2000 feet high. In short, not only has this portion of the Fraser valley been declared utterly impracticable for a railroad by Major Pope and other competent authorities, but it is so fenced in with mountains, that there could be no reasonable way of getting at it with a railroad if it were. It is over these mountains that the present waggon-road passes at an elevation, in one place for nearly 40 miles, of 3600 feet above the sea: the only road to the Cariboo mines and the north of the colony, and, considering circumstances, a lasting monument of Sir James Douglas's energetic and provident administration. Unfortunately the difficulties (as may be seen in Milton and Cheadle's 'North-West Passage,' p. 356, where there is a good sketch of one of them) were Alpine. Many places are most dangerous, the endless ascents and descents fatiguing and laborious in the extreme; and as the sharp turnings, besides many other portions, have had to be built up on cribs or cross timbers, which will very soon rot, the repairs will form a heavy charge on the Colony.

So that, supposing the difficulties of the Rocky Mountains to be got over, the Cascade Range still intercepts all communication by railroad between the eastern parts of the Colony and New Westminster. To say nothing of the utter worthlessness of the country to be traversed, amounting to 450 miles out of the 600 from its eastern limit by Howse Pass. Add to this that the navigation across the Gulf of Georgia, and at the entrance to the Fraser, by a narrow intricate channel, through shifting sands, full five miles long, is both difficult and dangerous, and that the river itself is frequently frozen up in winter for long periods, and it will be evident to every impartial mind that New Westminster, with its 700 or 800 inhabitants, can never become the terminus of an overland railway to connect with Victoria and the ocean.

Further north along the coast there are numerous inlets which penetrate into the Cascade range, but the greater part terminate abruptly, like the fiords in Norway, or are too distant; or like Gardener's Channel, Dean's Canal, or the Skeena, are too far to the north-west to be available for any present communication with the mines or the interior. There are, however, two exceptions: the North Bentinck Arm, by Milbank Sound, in lat. 52° 13′, and Bute Inlet, opposite Vancouver Island, with a safe and easy inland communication by steam to Victoria, distant 185 nautical miles. Both these inlets terminate in a valley of some extent; and as attempts have been made to open both of them, it becomes necessary to explain why the writer gave a decided preference to Bute Inlet for a waggon-road, and *à fortiori* for a railroad, over Bentinck Arm or any other line.

Superiority of the Bute Inlet Route.—The advantages of the Bute Inlet route consist in its central position, fine town-site and harbour, or rather its two harbours, accessible at all seasons of the year, its easy and safe connection with Victoria and the ocean, and the proximity of the coal mines at Nanaimo. The port of New Westminster, on the contrary, is difficult of access, in consequence of its constantly-shifting sandbanks, and closed, as aforesaid, by ice during 2 and even occasionally 3 and 3½ months in the winter.

The harbour at Bella Coola, on the Bentinck Arm Trail (the only other feasible route to the mines), is situated 435 miles further to the north, and has been pronounced to be totally unworthy, presenting no shelter, no good anchorage, no good landing-place, but a vast mud flat, with a mile of swamp, intersected by a shallow river, barely navigable for canoes. Or to quote the words of Lieutenant Palmer, of the Royal Engineers, in his official report on the Bentinck Arm Trail, "A large flat shoal, extending across the head of the Arm, composed of black fetid mud, supporting a rank vegetation, bare at low spring tides for about 700 yards from high water mark, and covered at high tide with from 1 to 8 feet of water, and at a distance of 800 yards from shore terminating abruptly in a steep shelving bank, on which soundings rapidly increase to 40 and soon 70 fathoms." The whole is, moreover, subject to violent winds and powerful tides.

On the Bute Inlet route the snow, owing to its more moderate elevation, and its more southern latitude and aspect, melts fully 3 weeks sooner than on the Bentinck Arm Trail; and the road is dry, entirely exempt from snow slides, and level the whole way through: unlike the endless mountains on the Fraser route, or the steep unavoidable ascent from the sea, and numerous swamps by that of Bentinck Arm. The Bute Inlet Trail *cuts through* the Cascade Mountains by a deep valley studded with rich bottoms, affording plentiful pasture and rising imperceptibly for 80 miles, when it nearly attains its greatest height (2500 feet), from which point forward in the plain it was free from snow for 25 miles in February, 1862. The Bentinck Arm Trail, on the contrary, is obliged to *climb over* the range, owing to the valley, when 35 miles from the inlet, turning abruptly to the S.S.E., and running longitudinally with the range, instead of cutting through it; so that the trail on leaving it attains in a very few miles from that point a height of 3840 feet, as will be better shown by the following table, compiled from Lieut. Palmer's report:—

	GRADIENTS.				
	Miles.	Per Mile.	One in	Rise.	Altitude.
		Feet.	Feet.	Feet.	Feet.
From the inlet to Shtooiht, at the turn of the valley	35	..	..	..	Say 500
Thence to Cokelin, "by a narrow gorge, hemmed in by steep and continuous cliffs"	14	43·6	121·1	610	1110
From Cokelin to the Great Slide ..	5	356·0	14·8	1780	2890
From the Great Slide to the Precipice	11	86·3	61·2	950	3840
Or, supposing it possible to equalise these grades (a thing next to impracticable), we should have ..	30	111·3	47·4	3340	..

"After which the trail continues to rise gradually, the soil becoming shallow and meagre, the vegetation thinner and inferior, for 60 miles more, till it crosses the summit range at an altitude of 4360 feet."—(Lieut. Palmer's report.) And it then only enters on good soil some 20 miles before crossing the Bute Inlet Trail at Benchee Lake ; whereas, along the latter line, the bunch grass peculiar to the country flourishes over thousands of acres.

Finally, the distance from Bute Inlet to the mouth of Quesnelle River is fully 25 miles less than by the Bentinck Arm Trail, and not much more than half that from New Westminster (222 against 393), besides having no portages or mountains; thus presenting an open communication during the whole winter which exists on neither of the other routes; and a diminution of nearly one half in the time and cost of conveyance, as compared with that by the Fraser. Lieut. Palmer, in his report, admits "the geographical advantages of the Bute Inlet route over the others."

Another item in favour of the Bute Inlet route is its great strategical security in case of any difficulties with our American neighbours. The Fraser River, from Fort Hope downwards, runs for 80 miles parallel to the boundary line, and at a distance varying from 6 to 12 miles from that frontier; whilst the only road from New Westminster to Hope and the interior has been constructed between them; so that a detachment of a few hundred men could at almost any point intercept all communication, and literally starve out the whole colony. The Bute Inlet route, on the contrary, would be perfectly safe, and its approaches impregnable.

General Features of the Ground over which the Railroad would pass from Bute Inlet to the Mouth of Quesnelle River.—The valley of the Homathco River, which falls into Bute Inlet, presents a deep cut or fissure through the Cascade Mountains, varying from 3 miles to less than a quarter of a mile in width, is 84 miles in length, and rises imperceptibly to a height of 2400 feet or more above the sea, at the point where it enters on the plain beyond the mountains. For the first 31 miles, up to the *canyon*, or defile, the bed of the valley is composed of diluvial soil, consisting of a sandy clay or loam, and forming a hard dry bottom. The canyon itself is exactly 1¼ mile in length. Beyond the canyon the valley again forms and opens for about 6 miles, the soil partaking of the nature of the rocks from which it is derived, and becoming more gravelly, and of a reddish cast. The river after this is again confined to a narrow bed, but the country is more open, and the road passes for 6 other miles near the river along the foot of the mountains, until the valley once more opens and recovers its flat level aspect, which it maintains up to the plain.

The mountainous region thus traversed is composed, for the first 40 miles, up to the neighbourhood of Tiedeman's Glacier, of brittle quartzose granite, hard to drill, but yielding easily to the blast. The rock then becomes more feldspathic, and contains more hornblende, the former element decomposing into a reddish-white, greasy clay. This continues until a short distance below the First Lake, where the granite ceases, and is replaced for six or eight miles by a clay-slate of variegated colours, bearing the marks of igneous action. This slaty zone is supposed to be auriferous, and is in all probability a continuation of the Bridge River diggings. It is followed by beds of stratified granite, of apparently more modern origin, and which are intersected here and there for a short distance by veins of augitic rock, varying from 6 inches to 2 feet in thickness. The valley now opens more and more, till at a distance of 84 miles from the inlet the mountains cease abruptly, and the road enters on the plain beyond.

The rise in the valley, though apparently uniform, presents considerable variations. Thus, the *canyon* presents a rise in 30½ miles of only 860 feet above the sea. The river then becomes much more rapid, and gives for the next 13 miles an ascent probably of 780 feet, after which for 40 miles and up to Fifth Lake, the rise diminishes to 630 feet, beyond which there is a sharp ascent for a couple of miles more of, say, 150 feet, when the summit, or watershed, is attained.

We shall thus have the following gradients:—

	Feet.					Feet.					
Rise	865	in	30½	miles	=	28·36	per	mile, or	1	in	186·2
„	780	„	13	„	=	60·00	„	„	1	„	88·0
„	630	„	40	„	=	15·75	„	„	1	„	335·2
„	150	„	2	„	=	75·00	„	„	1	„	70·4
Total ..	2425										

The above figures must of course be considered as only approximate.

The plain consists of a deep sedimentary soil, watered by numerous lakes and small streams, and varied by occasional elevations formed of sandstone belonging probably to the lower series of the chalk formation, and apparently owing their upheaval to plutonic action, which has hardened or calcined the rock. They form here and there conical elevations, varying from 500 to 800 feet in height. Such, for instance, are Mount Palmer, to the north of Benchee Lake, and several others that figure on my map. These elevations, and the low spurs or ranges of hills that accompany them, necessitate but few deviations from the straight line, and the plain in general offers every facility for the establishment of a railroad. Towards the mouth of the Quesnelle there is a gradual descent for some miles, but unattended by any difficulty; and at the terminus on the banks of the Fraser there exists a rich plateau of cultivatable soil.

Agricultural Resources on the Line.—The valley above described is in general heavily timbered, but studded, as aforesaid, with rich bottoms, capable of producing any kind of crops, and offering open spots for small farms. The plain itself (the only one in British Columbia of any extent) has been admired by all who have seen it, on account of its vast pasturages and park-like scenery. Its width, where it is crossed by the Bute Inlet trail, is about 120 miles, and it stretches from the neighbourhood of Lake Kamloops and the south-west end of the Great Quesnelle Lake across the Fraser, in a N.N.W. direction more than 300 miles to the Skeena, beyond which river it has not been explored. It contains millions of acres of good ground, and some of the best along the proposed route, where large tracts of land are sure to be taken up as soon as the first communications are established. Some objections have been made to its elevation, which averages about 2500 feet above the sea in the southern part, though gradually lowering towards the Skeena, where the climate in consequence becomes considerably milder. But this makes it none the less valuable for grazing purposes, which will be by far the most profitable branch of farming in the country when there are means of conveyance. At present, the cattle consumed in Cariboo are driven overland some 500 or 600 miles from Washington territory.

Cereals can also be cultivated with success, as is fully proved by the following list, showing some of the crops which were raised last season on the Fraser route, together with the corresponding latitudes and altitudes:—

	Lat. N.	Altitude.			
Deep Creek ..	52°17′	2255	100	acres of	oats.
William's Lake	52°12′	2135	200	„	oats, barley and wheat.
Cut off Valley	51°10′	2973	200	„	oats, barley, potatoes, and a little wheat.
Mt. Cornwall	51°00′	1508	70	„	oats, barley, and 300 bushels of wheat.

But the above localities are all to the east of the Fraser, and it must be borne in mind that as the isothermal lines approach the Pacific they extend diagonally towards the north, in the proportion of about 1° of latitude to 2° of longitude. Thus at Benchee Lake, on the Chilcoaten Plain, in the same latitude as William's Lake, and rather more elevated, but 2° more to the west, and therefore very probably identical in climate, I saw in the autumn of 1863 a small crop of oats, barley, and turnips, which Mr. Manning had raised on trial, and which had perfectly succeeded; whilst some potatoes, which had been placed in an exposed situation to the south, had been frost-bitten. The Indian horses pass the winter out of doors, without fodder or stabling—the best proof that the winters are not very severe.

The superiority of the Bute Inlet route (the only one which opens a communication available for a railroad with this magnificent plain) being thus proved, it remains to say a few words on the different passes which have been explored through the Rocky Mountains, on British territory, leaving out the Athabasca Pass by Peace River, in lat. 56° 28′, as being too far north for present purposes:—

Names of the Passes.	Ridge or Divide.		
	Latitude.	Longitude.	Altitude.
	Degrees.	Degrees.	Feet.
1. Yellow Head Pass, from the Athabasca to the Upper Fraser (Rae)	52·54	118·33	3760
2. Howse Pass, from Deer River, by Blaeberry River to the Upper Columbia	51·57	117·07	6347
3. Kicking Horse Pass, by Bow River and Kicking Horse River, to the Upper Columbia (Sullivan)	51·16	116·32	5420
4. Vermillion Pass, from the South Saskatchewan, by Fort Bow (4100 feet), to the Kootanie (Hector)	51·06	116·15	4947
5. Kananaskis Pass, from Fort Bow, by Pamsay River, to the Kootanie (with a short tunnel 4600 feet) (Palliser)	50·45	115·31	5985
6. Crow's Nest Pass, by Crow River to the Kootanie	49·38	114·48	..
7. British Kootanie Pass, by Railway River to the Kootanie (Blakiston)	49·27	114·57	5960
8. Red Stone Creek, or Boundary Pass, from Waterton River to the Kootanie (partly on American ground) (Blakiston)	49·06	114·14	6030

With the exception of the Yellow Head Pass in the above table, which is comparatively straight and short, and the three last, which are tolerably so, but too near the Boundary line to be available; the four others describe the most circuitous routes, among a labyrinth of glaciers, and mountains covered with perpetual snow. Besides which, the approach to them over the plain by the South Saskatchewan is for nearly 100 miles through an arid, sandy, treeless district, forming the northern limit of the great American Desert; instead of the rich fertile belt drained by the north branch, which is also the more considerable one of the two. And it is in the very latitude of this belt that the great barrier of the Rocky Mountains is cleft asunder, so that the road runs along this fertile zone in a direct line up to the lowest and easiest Pass, as to a natural gateway leading to the Pacific. But we have already seen that all the southern passes (and Captain Palliser wished it to be distinctly understood that he considered these as far from being the best that could be discovered) are intercepted further west by the Selkirk range, which presents an impenetrable barrier, and renders them so far next to useless. When, therefore, we consider their relative altitude, their necessarily precipitous nature, and the great depth of snow (27 feet or more), under which they lie buried during eight months of the year, there can be no hesitation (and such, indeed, is now the general opinion) in regarding the Yellow Head Pass through the Rocky Mountains, with its easy gradients and low elevation, as the only feasible one for a railroad. But the same has been shown with respect to the Upper Fraser, and the Bute Inlet valley, through the Cascade range. It is therefore clearly demonstrated that these passes, which connect naturally with each other, offer the best and, indeed, the only really practicable line for a railway to the Pacific through British Columbia.

I shall conclude with a few lines on the urgency of a direct communication between the Canadas and the Pacific through British territory—a fact which is becoming every day more and more evident. In a political point of view, and as a natural consequence of the late confederation, it would contribute essentially to its prosperity; for so long as there is no Overland route, any communication with British Columbia must remain a myth and the Red River Settlement continue isolated, instead of becoming a valuable annex to the Union. At present England has no other communication with the Pacific but by New York and San Francisco: and in case of war with the United States the only possible postal line would be through her own territory across the Rocky Mountains; whereas by opening an overland communication immediately, a mail service would be established forthwith, not only to British Columbia and Vancouver Island, but before long to Australia and Asia. In the United States the Central Pacific Railroad passes over what is commonly called the great American Desert, a vast tract of country destitute of wood and water, dry, barren, and unfit for the habitation of man; yet in spite of this drawback, and though San Francisco possesses no coal for steamboat purposes, it is progressing rapidly, and the time is not far distant when it will be opened. Passengers, mails, and the lighter, costlier kinds of goods will pass over it; it is calculated to divert a great part of the trade of China and Japan from the Old to the New World, and if we do not wake up we shall bitterly regret the lost opportunity, and an important traffic, which might so easily pass over our own territory, and which, from our position, ought naturally to belong to us.

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